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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,922	02/17/2004	Gi-soon Hwang	KSA-0002	1909

23413 7590 10/20/2006

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EXAMINER	
LEWIS, DAVID LEE	

ART UNIT	PAPER NUMBER
2629	

DATE MAILED: 10/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/780,922	HWANG, GI-SOON	
	Examiner	Art Unit	
	David L. Lewis	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/20/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. **Claims 1-6 and 8-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Yoo (6587101).**

As in claim 1, Yoo teaches of a driver circuit for a liquid crystal panel, **figure 2 item 200**

comprising: a gate driving unit for applying signal voltages to gate lines of a liquid crystal panel, **figure 2 item 22, column 8 lines 30-40**;

a data driving unit for applying signal voltages to data lines of a liquid crystal panel, **figure 2 item 22, column 8 lines 30-40**;

a determination unit for determining whether horizontal or vertical synchronization signals are input from an outside and performing a normal mode or power saving mode depending upon determination results, **figure 2 item 24/26, column 5 lines 23-60**;

and a switching unit for shutting off power to the data and gate driving units depending upon the determination results, **figure 2 item 28, column 5 lines 45-60**.

As in claim 2, Yoo teaches of a wherein the determination unit outputs a Power Down Control (PDC) signal to the switching unit unless one of the horizontal and vertical synchronization signals is input, figure 2 item 26, column 5 lines 23-60.

As in claim 3, Yoo teaches of a wherein the determination unit outputs a PDC signal to the switching unit unless both of the horizontal and vertical synchronization signals are input, figure 2 item 26, column 5 lines 23-60.

As in claim 4, Yoo teaches of a wherein the determination unit further determines whether the horizontal or vertical synchronization signals are normal, column 5 lines 23-60.

As in claim 5, Yoo teaches of a wherein the determination unit determines whether the horizontal or vertical synchronization signals are normal by checking periods of the horizontal or vertical synchronization signals or counting numbers of clocks in a specified range, column 5 lines 23-60.

As in claim 6, Yoo teaches of a wherein the determination unit outputs a PDC signal to the switching unit if the horizontal or vertical synchronization signals are abnormal, column 5 lines 23-60.

As in claim 8, Yoo teaches of a wherein the switching unit shuts off power to the data driving unit and the gate driving unit when the PDC signal is input from the determination unit, figure 2 item 28, column 5 lines 23-60.

As in claim 9, Yoo teaches of a further comprising a Transmission Minimized Differential Signaling (TMDS) reception unit for decoding a TMDS data signal input from an outside to a horizontal or vertical synchronization signal and a digital image signal and outputting the decoded horizontal or vertical synchronization signal and the decoded digital image signal, figure 2 item 20, column 5 lines 23-60.

As in claim 10, Yoo teaches of a further comprising a timing controller for generating timing signals to drive the liquid crystal panel depending upon the horizontal or vertical synchronization signal, column 5 lines 23-60.

As in claim 11, Yoo teaches of wherein the timing controller holds the timing signal until the horizontal or vertical synchronization signal becomes normal, column 5 lines 23-60.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. **Claims 7 and 12-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoo (6587101) in view of (2003/0020677).**

As in claim 12, Yoo teaches of a liquid crystal display,

comprising: a liquid crystal panel, **column 1 lines 22-28, column 5 lines 25-35;**

and a driver circuit for driving the liquid crystal panel, the driver circuit comprising: a gate driving unit for applying signal voltages to gate lines of a liquid crystal
panel, **column 1 lines 58-65, column 8 lines 30-40**;

a data driving unit for applying signal voltages to data lines of a liquid crystal panel, **column 1 lines 58-65, column 8 lines 30-40**;

a determination unit for determining whether horizontal or vertical synchronization signals are input from an outside and performing a normal mode or power saving mode depending upon determination results, **figure 2 item 24/26**

and a switching unit for shutting off power to the data and gate driving units depending upon the determination results, **figure 2 item 28**.

However Yoo is silent as to said well known backlight having a light source.

Nakano teaches of said backlight having a light source, figure 1 item 12, paragraph 48, in system as taught by Yoo having an interface employing TMDS, paragraph 52, said backlight being used in conjunction with **a liquid crystal display having a plurality of thin film transistors** formed on intersections of a plurality of data and gate lines, paragraph 49.

Wherein it would have been obvious to the skilled artisan at the time of the invention to combine the backlighting and TFT features of Nakano with the power saving clock signal detecting features of Yoo, because Yoo teaches of a system for an LCD, and LCD's are known to be provided with a backlight and TFT's, as found in claim 12.

As in claim 13, Yoo teaches of wherein the determination unit outputs a PDC signal to the switching unit unless one of the horizontal and vertical synchronization signals is input, figure 2 item 26, column 5 lines 23-60.

As in claim 14, Yoo teaches of wherein the determination unit outputs a PDC signal to the switching unit unless both of the horizontal and vertical synchronization signals are input, figure 2 item 26, column 5 lines 23-60.

As in claim 15, Yoo teaches of wherein the determination unit further determines whether the horizontal or vertical synchronization signals are normal, figure 2 item 26, column 5 lines 23-60.

As in claim 16, Yoo teaches of wherein the determination unit determines whether the horizontal or vertical synchronization signals are normal by checking periods of the horizontal or vertical synchronization signals or counting numbers of clocks in specified ranges, figure 2 item 26, column 5 lines 23-60.

As in claim 17, Yoo teaches of wherein the determination unit outputs a PDC signal to the switching unit if the horizontal or vertical synchronization signals are abnormal, figure 2 item 26, column 5 lines 23-60.

As in claim 7 and 18, Yoo teaches of wherein the switching unit is a MOSFET, figure 2 item 28, wherein said feature would have been an obvious design choice given Yoo generally teaches of transistor circuitry in correspondence to transistors, figure 6, known to correspond to the Mosfet type.

As in claim 19, Yoo teaches of wherein the switching unit shuts off power to the data driving unit and the gate driving unit when the PDC signal is input from the determination unit, column 5 lines 23-60.

As in claim 20, Yoo teaches of further comprising a TMDS reception unit for decoding a TMDS data signal input from an outside to a horizontal or vertical synchronization signal and a digital image signal and outputting the decoded horizontal or vertical synchronization signal and the decoded digital image signal, figure 2 item 20.

As in claim 21, Yoo teaches of further comprising a timing controller for generating a timing signal to drive the liquid crystal panel depending upon the horizontal or vertical synchronization signal, column 5 lines 23-60.

As in claim 22, Yoo teaches of wherein the timing controller holds the timing signal until the horizontal or vertical synchronization signal becomes normal, column 5 lines 23-60.

As in claim 23, Yoo teaches of wherein the switching unit shuts off power to the data driving unit and the gate driving unit when the PDC signal is input from the determination unit, figure 2 item 28, column 5 lines 23-60.

As in claim 24, Yoo teaches of wherein the switching unit shuts off power to the data driving unit and the gate driving unit when the PDC signal is input from the determination unit., figure 2 item 28, column 5 lines 23-60

As in claim 25, Yoo teaches of wherein the switching unit shuts off power to the data driving unit and the gate driving unit when the PDC signal is input from the determination unit, figure 2 item 28, column 5 lines 23-60.

As in claim 26, Yoo teaches of wherein the switching unit shuts off power to the data driving unit and the gate driving unit when the PDC signal is input from the determination unit, figure 2 item 28, column 5 lines 23-60.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Park et al. (2004/0257319), Ko et al. (2003/0043140)

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David L. Lewis** whose telephone number is **(571) 272-7673**. The examiner can normally be reached on MT and THF from 8 to 5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala, can be reached on **(571) 272-7681**. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571)-273-8300.

5. Please note that all future correspondences directed to David L. Lewis must be sent to Art Unit 2629.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner: David L. Lewis
October 16, 2006